

December 16, 2016

David Albright
Manager, Drinking Water Protection Section
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

SUBJECT: Response to EPA Notice of Deficiency
Underground Injection Control (UIC) Permit Application
Class I Non-Hazardous R9UIC-CA1-FY17-1
Badger Creek Limited, Bakersfield, California

Dear Mr. Albright:

The following are responses to your comments, shown in **bold**, below:

Attachment Q – Plugging and Abandonment Plan: The proposed Abandonment Program must be revised and cost estimates for the Plugging and Abandonment provided. Note that EPA Region 9 does not allow for mud plugging of zones for well abandonment. We require that the lower perforated zones be cement squeezed for at least 100' above the top of the perforations and the casing filled with neat cement between the squeezed intervals to within 5' of the surface. For well WD-1, please revise the method and costs for this abandonment.

A revised Plugging and Abandonment (P&A) Program and Cost Estimate are included in Appendix A. The total estimated cost for the P&A program is approximately \$146,465.

Attachment R – Financial Assurance: The Financial Assurance information provided is not adequate. In Attachment R there is reference to costs totaling \$160,000 for plugging and abandoning well WD-1. Please revise and resubmit your cost estimate based on our required P&A procedures. EPA Region 9 requires financial assurance in an amount that considers the estimated cost of an independent third-party contractor to perform the abandonment, along with a contingency factor to account for various uncertainties in the event that EPA is required to P&A the well. A typical Class I UIC contingency factor is three, thus, for existing well WD-1 the amount of the financial assurance required will be 3 times the revised abandonment proposal amount. Submit your Financial Assurance information and surety bond to reflect this revised amount required for P&A of well WD-1.

Please see response to comments on Attachment Q for a detailed cost estimate on EPA required P&A procedures for well WD-1. The revised cost estimate totals \$146,465,

which includes a 10% contingency factor. The financial assurance will cover approximately three times the estimated cost of the P&A program using self-insurance. Badger Creek Limited will provide the EPA with a detailed letter of financial assurance by January 31, 2017.

Additionally, please provide information regarding the Corporate Structure of Badger Creek Limited, including officers of the Corporation and information regarding signature authority within the organization.

Information regarding Corporate Structure is shown in Appendix B. Included in Appendix C is information regarding signature authority within Badger Creek Limited.

Considerations of Federal Law

40 CFR §144.4 requires EPA consider the potential applicability of several specific Federal Laws (the Wild and Scenic Rivers Act (WSRA), National Historic Preservation Act (NHPA), Endangered Species Act (ESA), Coastal Zone Management Act (CZMA), and the Fish and Wildlife Conservation Act (FWCA)). To expedite our consideration of these laws, we request that you describe how you will satisfy applicable requirements under those Federal Laws.

The activities requested in the permit application apply to an existing structure, well WD-1, therefore, the activities do not cause any disturbances that would apply to the above listed Federal Laws. Below is a summary of the applicability of the specific listed Federal Laws to the permit application R9UIC-CA1-FY17-1.

- The Wild and Scenic Rivers Act (WSRA), 16 U.S.C. 1273 *et seq.* Section 7 of the Act prohibits the Regional Administrator from assisting by license or otherwise the construction of any water resources project that would have direct, adverse effect on the values for which a national wild and scenic river was established. WSRA is not applicable to permit number R9UIC-CA1-FY16-1. Appendix D shows that the closest classified river, the Kern River, is approximately 50 miles northeast of the property.
- The National Historic Preservation Act (NHPA), 16 U.S.C. 470 *et seq.* Section 106 of the Act and implementing regulations require the Regional Administrator, before issuing a license, to adopt measures when feasible to mitigate potential adverse effects of the licensed activity and properties listed or eligible for listing in the National Register of Historic Places, The Act's requirements are to be implemented in cooperation with State Historic Preservation Officers and upon notice to, and when appropriate, in consultation with the Advisory Council on Historic Preservation. NHPA is not applicable to permit number R9UIC-CA1-FY16-1. Appendix E shows that the property is not located within a Historic Place, the nearest Historic place is approximately 3 miles to the East.
- The Endangered Species Act (ESA), 16 U.S.C. 1531 *et seq.* Section 7 of the Act and implementing regulations require the Regional Administrator to ensure, in

- consultation with the Secretary of the Interior Commerce, that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat. ESA is not applicable to permit number R9UIC-CA1-FY16-1. The buildings and well already exist and do not threaten species or adversely affect habitats.
- The Coastal Zone Management Act (CZMA), 16 U.S.C. 1451 *et seq.* Section 307 © of the Act and implementing regulations prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification. CZMA is not applicable to permit number R9UIC-CA1-FY16-1. This property is not near the coast and does not lie within the 1,000 yard inland from high tide standard.
 - The Fish and Wildlife Conservation Act (FCWA), 16 U.S.C. *et seq.* requires the Regional Administrator, before issuing a permit proposing or authorizing the impoundment (with certain exemptions), diversion, or other control or modification of any body of water, consults with the appropriate State agency exercising jurisdiction over wildlife resources to conserve these resources. FCWA is not applicable to permit number R9UIC-CA1-FY16-1. The property will not be impounding, diverting, or modifying any bodies of water.

An updated electronic copy of the permit application will be submitted electronically via email.

If you have any questions regarding this letter, please contact me at (661) 387-7802 or Joe Selgrath of EnviroTech Consultants, Inc. at (661) 377-0073 ext. 12.

Sincerely,



Adam Rogge
Director of Regulatory Compliance

Cc: Joe Selgrath, EnviroTech Consultants, Inc.
Alan Walker, CA DOGGR
Bill Bartling, CA DOGGR, Inland District
Clay Rodgers, Central Valley Regional Water Quality Control Board

APPENDIX A

Revised Plugging and Abandonment Program and Cost Estimate

Badger Creek Ltd.
Kern Front-Completion Through W/O Rig

Revised
12/12/2016
9:38 AM

| ACTIVITY CODE | OPERATION DESCRIPTION | MD ft | MW ppg | EXPECTED hrs | CUM TIME days |
|---------------|---|-------------------------------|--------|--------------|---------------|
| PROD | MIRU Production Rig. Release packer and POOH 2-7/8" tubing. | 6,266' | 8.4 | 24 | 1.0 |
| PROD | Make scraper run to 5940'. POOH. RIH & set RBP @ 2450'. Spot sand on RBP. | 6,266' | 8.4 | 24 | 2.0 |
| PROD | RIH OE tubing, spot cmnt, PU & sqz Cmnt. WOC. DO & test sqz. Circ out sand. Retrieve BP. | 6,266' | 8.4 | 24 | 3.0 |
| PROD | Make gauge run to 4000'. MIRU wireline. Perforate Olcese interval. RD Wireline. | 6,266' | 8.4 | 24 | 4.0 |
| PROD | MU and run packer on 2-7/8" tubing to ~3000'. Set packer. Pressure test back side. | 6,266' | 8.4 | 24 | 5.0 |
| PROD | Perform step rate test in Olcese | 6,266' | 8.4 | 24 | 6.0 |
| PROD | Perform step rate test in Olcese, RDMO WO Rig. | 6,266' | 8.4 | 24 | 7.0 |
| PROD | Install SCADA system. RU Wireline with RA Tracer. Put well on Injection. Log tracer. RD WL. | 6,266' | 8.4 | 24 | 8.0 |
| | Well on disposal. | | | | |
| | | TOTAL RIG TIME: 6,266' | | | 8 Days |

***Expected Hours = rotating time + survey time + bit/wiper trips
 PREPARED BY: KELSEY GALLEGOS
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DETAILED COST ESTIMATE FOR AFE

OPERATOR: Badger Creek Ltd.
LEASE: Kern Front
OBJECTIVE: Test Olcese
COUNTY: Kern
LOCATION: Sec 23-T28S-R27E MDB&M
WELL DESIGN: Casing: 13-3/8" x 9-5/8" x 7"

DATE: 12/12/2016
WELL NO: WD 1
PLANNED DEPTH: 6,350 ft.
COUNTY: Kern
STATE: CA

Notes: Pull tubing and packer. Make scraper run to 5940'. Set RBP @ 2450'. Braiden Head squeeze perf's f/ 2310'-2410'. Test sqz job. Retrieve RPB. Perforate Olcese Intervals f/ 3170'-3270', 3510'-3540', 3560'-3570', and 3580'-3690'. RIH tubing and packer. Perform SAPT across packer. Run injection step rate test. Put well on injection. Run RA Tracer survey. Return well to Salt Water Disposal with SCADA monitoring system.

| ITEM | CODE | QUAN | UNIT \$ | Dry Hole Cost | Drill, Eval & Complete | | CWC | REMARKS: |
|---|------|------|---------|---------------|------------------------|------------|------------|--|
| | | | | Drilling Rig | Drig Rig | W/O Rig | TOTAL | |
| INTANGIBLE COSTS: | | | | 0 Days | 0 Days | 8 Days | 8 Days | |
| Location & Permits | 402 | | | \$ - | \$ - | \$ 2,500 | \$ 2,500 | Permitting |
| Waste Disposal | 403 | | | \$ - | \$ - | \$ - | \$ - | |
| MIRUTO | 404 | | | \$ - | \$ - | \$ - | \$ - | |
| Drilling Rig | 404 | | | \$ - | \$ - | \$ - | \$ - | |
| Completion Rig | 404 | | | \$ - | \$ - | \$ 37,450 | \$ 37,450 | Dayrate - Daylights only |
| Mud & Trucking | 406 | | | \$ - | \$ - | \$ - | \$ - | |
| Bits | 408 | | | \$ - | \$ - | \$ 1,000 | \$ 1,000 | 6-3/4" MT Rental |
| Cementing | 410 | | | \$ - | \$ - | \$ 6,000 | \$ 6,000 | Squeeze Class G Neat cmnt |
| Rig Supplies | 412 | | | \$ - | \$ - | \$ 4,000 | \$ 4,000 | Fuel |
| Rentals | 414 | | | \$ - | \$ - | \$ 6,700 | \$ 6,700 | BOPE, RBP, etc. |
| Servicing Tangible Equipment | 416 | | | \$ - | \$ - | \$ - | \$ - | |
| Hauling | 420 | | | \$ - | \$ - | \$ 2,000 | \$ 2,000 | Misc trucking expenses for moving equipment in and out |
| Logging-Open Hole/Test | 424 | | | \$ - | \$ - | \$ - | \$ - | |
| Mud Logging | 424 | | | \$ - | \$ - | \$ - | \$ - | |
| Completion Fluids | 426 | | | \$ - | \$ - | \$ - | \$ - | |
| Completion WL/Perforating | 428 | | | \$ - | \$ - | \$ 51,500 | \$ 51,500 | Perforating and RA Tracer |
| Completion Services | 429 | | | \$ - | \$ - | \$ - | \$ - | |
| Treating | 430 | | | \$ - | \$ - | \$ - | \$ - | |
| Gravel Packing | 431 | | | \$ - | \$ - | \$ - | \$ - | |
| Contract Labor | 432 | | | \$ - | \$ - | \$ 1,000 | \$ 1,000 | Miscellaneous labor services |
| Supervision | 434 | | | \$ - | \$ - | \$ 10,000 | \$ 10,000 | Wellsite supervision - Single Man |
| Daily Operations Management | 436 | | | \$ - | \$ - | \$ - | \$ - | |
| Engineering | | | | \$ - | \$ - | \$ 5,000 | \$ 5,000 | Planning, program engineering |
| Directional Tools | 438 | | | \$ - | \$ - | \$ - | \$ - | |
| Communications | 481 | | | \$ - | \$ - | \$ - | \$ - | |
| Miscellaneous | 499 | | | \$ - | \$ - | \$ 6,000 | \$ 6,000 | SCADA monitoring system |
| Contingency | 10% | | | \$ - | \$ - | \$ 13,315 | \$ 13,315 | 10% Contingency |
| TOTAL INTANGIBLES | | | | \$ - | \$ - | \$ 146,465 | \$ 146,465 | |
| TANGIBLE COSTS: | | Feet | \$/FT | | | | | |
| Casing-Surface | 311 | | | \$ - | \$ - | \$ - | \$ - | |
| Casing-Intermediate | 311 | | | \$ - | \$ - | \$ - | \$ - | |
| Casing-Liner | 311 | | | \$ - | \$ - | \$ - | \$ - | |
| Tubing | 312 | | | \$ - | \$ - | \$ - | \$ - | |
| Wellhead Equipment | 315 | | | \$ - | \$ - | \$ - | \$ - | |
| Casing Hardware, ECP, DV Tools | 701 | | | \$ - | \$ - | \$ - | \$ - | |
| Sub-Surface Production Equip. | 704 | | | \$ - | \$ - | \$ - | \$ - | Note: Reuse existing tubing and packer. |
| Facilities - Tanks / Equip / Electrical | 710 | | | \$ - | \$ - | \$ - | \$ - | |
| Line Pipe & Valves | 716 | | | \$ - | \$ - | \$ - | \$ - | |
| Installation | 724 | | | \$ - | \$ - | \$ - | \$ - | |
| Pump Rods | 727 | | | \$ - | \$ - | \$ - | \$ - | |
| Contingency | 0% | | | \$ - | \$ - | \$ - | \$ - | No Contingency on Tangible Costs |
| TOTAL TANGIBLES | | | | \$ - | \$ - | \$ - | \$ - | |
| TOTAL AFE COST | | | | \$ - | \$ - | \$ 146,465 | \$ 146,465 | |

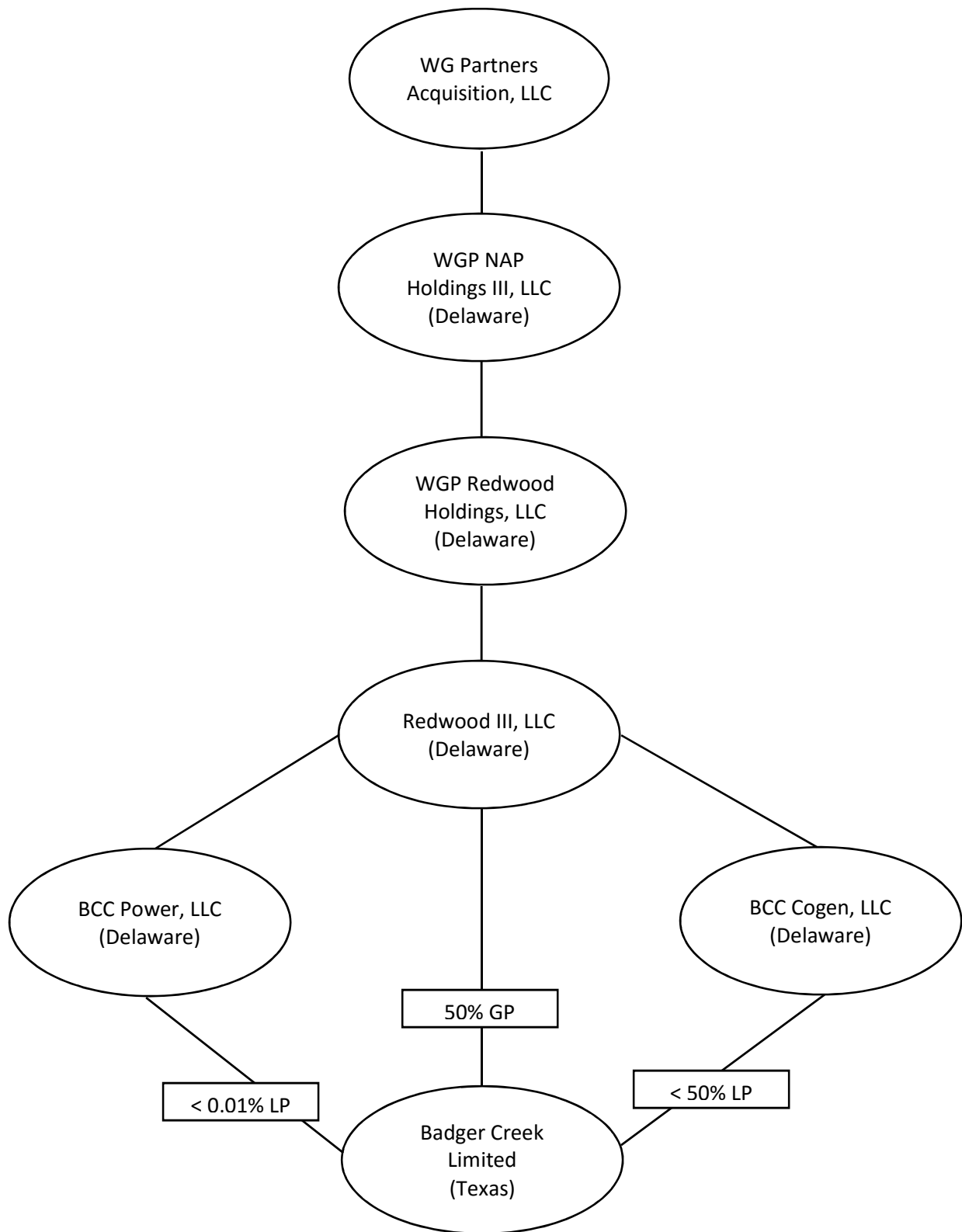
Prepared By: Kelsey Gallegos
Confidential

This AFE is only an estimate of cost. Actual costs may be less or greater than stated.



APPENDIX B

Badger Creek Limited Corporate Structure



APPENDIX C

Badger Creek Limited Signature Authority

BADGER CREEK LIMITED
Written Consent
of the General Partner

November 15, 2016

Redwood III, LLC, a Delaware limited liability company (the “**General Partner**”), being the General Partner of Badger Creek Limited, a Texas limited partnership (the “**Company**”), hereby consents to and adopts, as of the date hereof, the following resolutions of the Company with full force and effect.

Acceptance of Resignations

WHEREAS, the following individuals have resigned from all positions held as a director, manager and/or officer of the Company and all board committees held with or on behalf of the Company, pursuant to the Omnibus Resignation Letter dated as of November 15, 2016 attached hereto as Exhibit A (the “**Resignation Letter**”);

NOW, THEREFORE, BE IT RESOLVED, that the resignations of the following individuals pursuant to the Resignation Letter be, and they hereby are, accepted:

James C. Berner
Robert S. Hanna
Matthew S. Raben
Daren R. Schneider
Jennifer C. Zarrilli
Mark B. Florian
David V. DeAngelis
Bernard Angelo
Kevin P. Burns

Appointment of Officers

WHEREAS, the General Partner believes it is in the best interests of the Company and the Partners to appoint new officers of the Company;

RESOLVED, that effective as of the date hereof the following individuals be, and hereby are, appointed as officers of the Company:

Floyd Gent – Vice President
Douglas L. McCrary – Vice President
Daniel Mills – Vice President
Patrick E. Molony – Vice President
Kenneth W. Kilgroe – Secretary/Treasurer

Omnibus Resolutions


RESOLVED, that officers of the Company be, and each of them hereby is, authorized and empowered to take any and all such further action, to execute and deliver any and all such further agreements, instruments, documents and certificates and to pay such expenses, in the name and on behalf of the Company or such officer, as any such officer may deem necessary or advisable to effectuate the purposes and intent of the resolutions hereby adopted, the taking of such actions, the execution and delivery of such agreements, instruments, documents and certificates and the payment of such expenses by any such officer to be conclusive evidence of his or her authorization hereunder and the approval thereof.

RESOLVED FURTHER, that any and all actions taken by the officers of the Company or the General Partner to carry out the purposes and intent of the foregoing resolutions prior to their adoption are approved, ratified and confirmed.

[Signature Page Follows]

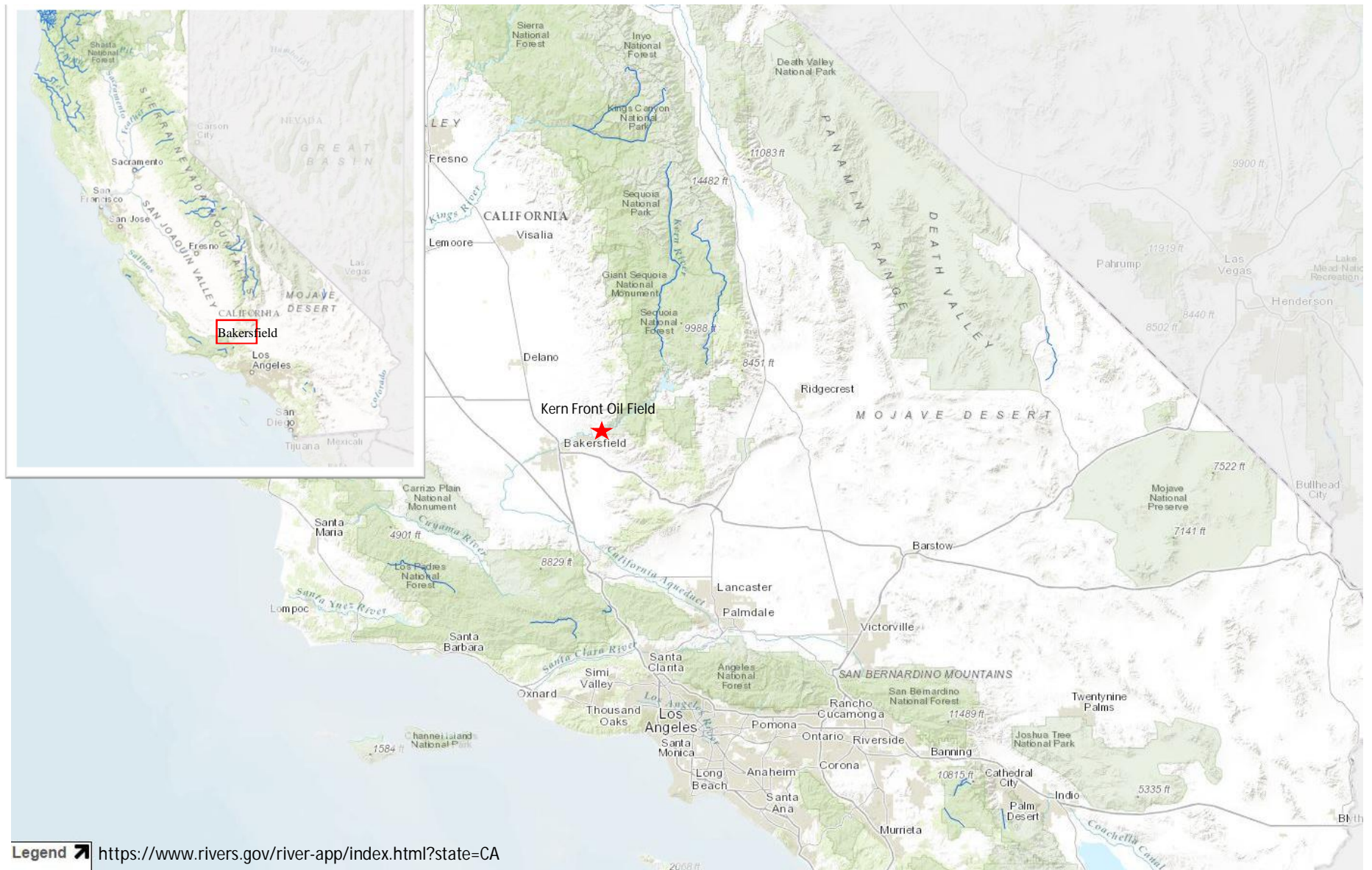
IN WITNESS WHEREOF, the undersigned has executed this Written Consent of the General Partner to be effective as of the date first above written.

REDWOOD III, LLC

By: 
Name: DOUGLAS L. MCCRARY
Title: VICE PRESIDENT

APPENDIX D

Wild and Scenic Rivers Location Map



APPENDIX E

National Historic Places Map

